



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,579	01/08/2002	Karen E. Kimball	07275-0030-01	4750
7590 06/14/2005			EXAMINER	
Hewlett Packard Company Intellectual Property Administration P.O Box 272400 Fort Collins, CO 80527-2400			HSU, ALPUS	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

87

Office Action Summary	Application No.	Applicant(s)	
	10/038,579	KIMBALL ET AL.	
	Examiner	Art Unit	
	Alpus H. Hsu	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 69-77 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-14,16-23,25,26,30-36,38-48,50-57,59,60,64-68 and 78-84 is/are rejected.
- 7) ☒ Claim(s) 3,15,24,27-29,37,49,58 and 61-63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2665

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 21-23, 30-34, 55-57, 64-68 are rejected under 35 U.S.C. 102(a) as being anticipated by the document entitled “Complex FreedomSwitch-Automated load balancing gives maximum efficiency” (cited by the applicant).

Referring to claim 21, the document entitled “Complex FreedomSwitch-Automated load balancing gives maximum efficiency” discloses an automatic load-balancing apparatus (FreedomSwitch) for a segmented electronic network, comprising: an intelligent port-distribution mechanism that moves ports to new segments to accomplish load-balancing (see FreedomSwitch Technical Overview, page 2, lines 11-12).

Referring to claim 22, the same document discloses that the mechanism first collects a snapshot of information about all network ports to be considered for redistribution (see FreedomSwitch Technical Overview, page 2, lines 12-15).

Referring to claim 23, the same document discloses that the snapshot further comprises any of the following: a management repeater port identification value; a management repeater previous segment identification value; and an amount of port network resource impact since power-up or last load-balancing activation (see FreedomSwitch Technical Overview, page 2, lines 12-15).

Referring to claim 30, the same document discloses that the apparatus comprising:

Art Unit: 2665

means for determining which ports are to be moved (see FreedomSwitch Technical Overview, page 2, lines 16-17).

Referring to claims 31-33, the same document discloses that the apparatus is adapted for operation with a packet-forwarding device without requiring an interface to internal packet-forwarding support hardware or adapted for operation with an external packet-forwarding device or adapted for operation without special knowledge by a user of said apparatus, the apparatus environment, or electronic networks in general (see Complex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, 8-10, page 2, lines 22-23).

Referring to claim 34, the same document discloses that at least a portion of the mechanism is adapted to reside remote from said apparatus within said network at a management location (see Complex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, lines 10-12, page 2, lines 11-13).

Referring to claims 55-57, 64-68, the same document discloses an automatic load-balancing method for a segmented electronic network as in apparatus claims 21-23, 30-34.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2665

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 25, 26, 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over the document entitled "Complex FreedomSwitch-Automated load balancing gives maximum efficiency" (cited by the applicant).

Referring to claims 25, 26, 59 and 60, the document entitled "Complex FreedomSwitch-Automated load balancing gives maximum efficiency" does not specifically disclose the mechanism keeps as many ports as possible on a previous segment while still obtaining a good overall load-distribution and the mechanism detects when further changes in port-to-segment assignments is not of benefit, which would have been obvious to one of ordinary skill in the art to implement into the system in the Complex FreedomSwitch since it is well known in the art and commonly applied in communications field to provide monitor and control mechanism in the switching system to provide data flow control to achieve maximum network efficiency.

6. Claims 1, 2, 4-14, 16-20, 35, 36, 38-48, 50-54, 78-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over the document entitled "Complex FreedomSwitch-Automated load balancing gives maximum efficiency" (cited by the applicant).

Referring to claims 1 and 2, the document entitled "Complex FreedomSwitch-Automated load balancing gives maximum efficiency" discloses an automatic load-balancing apparatus (FreedomSwitch) for a segmented electronic network, comprising: an intelligent port-distribution mechanism that moves ports to new segments to accomplish load-balancing (see FreedomSwitch Technical Overview, page 2, lines 11-12). The document differs from the claims, in that, it does

Art Unit: 2665

not disclose a detector for determining when load-balancing would not be beneficial and inhibiting load-balancing when a current load distribution is acceptable or when current network resource impact is so low that no real problems exist, which would have been obvious to one of ordinary skill in the art to implement into the system in the Compex FreedomSwitch since it is well known in the art and commonly applied in communications field to provide a detector to provide monitor and control mechanism in the switching system to provide data flow control to achieve maximum network efficiency.

Referring to claim 4, the same document discloses that the apparatus comprising: means for determining which ports are to be moved (see FreedomSwitch Technical Overview, page 2, lines 16-17).

Referring to claims 5-7, the same document discloses that the apparatus is adapted for operation with a packet-forwarding device without requiring an interface to internal packet-forwarding support hardware or adapted for operation with an external packet-forwarding device or adapted for operation without special knowledge by a user of said apparatus, the apparatus environment, or electronic networks in general (see Compex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, 8-10, page 2, lines 22-23).

Referring to claim 8, the same document discloses that at least a portion of the mechanism is adapted to reside remote from said apparatus within said network at a management location (see Compex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, lines 10-12, page 2, lines 11-13).

Referring to claims 35, 36, 38-42, the same document discloses an automatic load-balancing method for a segmented electronic network as in apparatus claims 1, 2, 4-8.

Referring to claims 9-12, the document entitled "Compex FreedomSwitch-Automated load balancing gives maximum efficiency" discloses an automatic load-balancing apparatus (FreedomSwitch) for a segmented electronic network, comprising: an intelligent port-distribution mechanism that moves ports to new segments to accomplish load-balancing (see FreedomSwitch Technical Overview, page 2, lines 11-12). The document differs from the claims, in that, it does not disclose an undo mechanism for undoing a prior load-balancing, taking information stored during a prior load-balancing activation and uses it to return ports to a previous configuration, taking no action on devices that were not known at the time of said prior load-balancing, and providing one or more levels of undo, which are well known in the art and commonly applied in communications field for system reconfiguration. Therefore, it would have been obvious to one of ordinary skill in the art to further implement the system in the Compex FreedomSwitch with an undo mechanism to provide the switching system with reconfiguration capability for fault recovery purpose.

Referring to claims 13 and 14, the document differs from the claims, in that, it does not disclose a detector for determining when load-balancing would not be beneficial and inhibiting load-balancing when a current load distribution is acceptable or when current network resource impact is so low that no real problems exist, which would have been obvious to one of ordinary skill in the art to implement into the system in the Compex FreedomSwitch since it is well known in the art and commonly applied in communications field to provide a detector to provide monitor and control mechanism in the switching system to provide data flow control to achieve maximum network efficiency.

Referring to claim 16, the same document discloses that the apparatus comprising:

Art Unit: 2665

means for determining which ports are to be moved (see FreedomSwitch Technical Overview, page 2, lines 16-17).

Referring to claims 17-19, the same document discloses that the apparatus is adapted for operation with a packet-forwarding device without requiring an interface to internal packet-forwarding support hardware or adapted for operation with an external packet-forwarding device or adapted for operation without special knowledge by a user of said apparatus, the apparatus environment, or electronic networks in general (see Complex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, 8-10, page 2, lines 22-23).

Referring to claim 20, the same document discloses that at least a portion of the mechanism is adapted to reside remote from said apparatus within said network at a management location (see Complex FreedomSwitch Automated load balancing gives maximum efficiency, page 1, lines 10-12, page 2, lines 11-13).

Referring to claims 43-48, 50-54, the same document discloses an automatic load-balancing method for a segmented electronic network as in apparatus claims 9-14, 16-20.

Referring to claims 78-81, the document entitled "Complex FreedomSwitch-Automated load balancing gives maximum efficiency" discloses a method for moving ports to new segments in a network for load balancing, comprising: collecting information about the ports and segments in the network, and assigning ports to new segments based on the information (see FreedomSwitch Technical Overview, page 2, lines 11-12). The document differs from the claims, in that, it does not disclose that the information including network resource impact value, and the collecting of information about the ports and segments includes collecting network resource impact values for the ports and segments, and the assigning of ports to new segments

Art Unit: 2665

includes assigning ports based on past history of the ports, which are all well known in the art and commonly used in communications field for network resource allocation purpose.

Therefore, it would have been obvious to one of ordinary skill in the art to further include the information of network resource impact value and assigning ports based on past history of the ports to provide system with maximum network resource allocation to further improve the system efficiency.

Referring to claim 82, the same document discloses that the apparatus comprising:
means for determining which ports are to be moved (see FreedomSwitch Technical Overview, page 2, lines 16-17).

Referring to claims 83 and 84, the document differs from the claims, in that, it does not disclose a step for determining when load-balancing would not be beneficial and a step of undoing a previous assignment of the ports to new segments, which would have been obvious to one of ordinary skill in the art to implement into the system in the Complex FreedomSwitch since it is well known in the art and commonly applied in communications field to implement to provide monitor and control mechanism and reconfiguration mechanism in the switching system to provide data flow control and system reconfiguration to achieve maximum network reliability and efficiency.

7. Claims 69-77 are allowed.

8. Claims 3, 15, 24, 27-29, 37, 49, 58, 61-63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2665

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

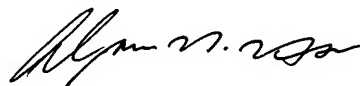
McMillen, Naganuma et al., Waclawsky et al., and Tsuchiya et al. are additionally cited to show the common feature of load balancing in data communication network similar to the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHH



Alpus H. Hsu
Primary Examiner
Art Unit 2665